

WHAT IS CLAIMED IS:

1 1. A method for transmitting comprising:
2 providing an encoding alphabet comprising a plurality of information
3 characters;
4 producing at least a first waveform associated with a first information
5 character;
6 producing at least a second waveform associated with said first
7 information character;
8 producing a third waveform by combining said first and second
9 waveforms, thereby defining a symbol; and
10 transmitting said third waveform.

1 2. The method according to claim 1 wherein said third waveform
2 comprises one cycle of said first waveform and one cycle of said second waveform.

1 3. The method according to claim 1 further including producing a
2 fourth waveform representing a second information character.

1 4. The method according to claim 3 wherein said third waveform and
2 said fourth waveform have the same period.

1 5. The method according to claim 3 wherein said third and fourth
2 waveforms have the same period.

1 6. The method according to claim 1 wherein said first waveform and
2 said second waveform each represents said first character information.

1 7. The method according to claim 6 wherein said first waveform and
2 said second waveform are identical waveforms.

1 8. The method according to claim 6 wherein said first waveform and
2 said second waveform have different periods.

1 9. The method according to claim 1 wherein said first waveform and
2 said second waveform together represent said first character information.

1 10. The method according to claim 1 further including producing at
2 least a fourth waveform, wherein said producing a third waveform includes combining
3 said fourth waveform with said first and second waveforms.

1 11. The method according to claim 10 wherein said first waveform,
2 said second waveform, and said fourth waveform are different waveforms, which together
3 represent said first information character.

1 12. A method for communication between a transmitter and a receiver
2 comprising:

3 generating an analog waveform including generating at least a first
4 waveform corresponding to an information character of an encoding alphabet, said first
5 waveform defining a symbol, said first waveform having a first period; and

6 transmitting, from said transmitter to said receiver, a source signal
7 characterized by said analog waveform,

8 said generating at least a first waveform including:

9 generating a second waveform having a period less than said first
10 period;

11 generating a third waveform having a period less than said first
12 period, said second and third waveforms representing said information character; and

13 combining said second and third waveforms to produce said first
14 waveform.

1 13. The method according to claim 12 wherein said first waveform
2 comprises one cycle of said second waveform and one cycle of said third waveform.

1 14. The method according to claim 12, wherein said generating an
2 analog waveform further includes generating a fourth waveform corresponding to another
3 information character of said encoding alphabet, wherein a period of said fourth
4 waveform is equal to said first period.

1 15. The method according to claim 12, wherein said second and third
2 waveforms, each is selected from the group consisting of sinusoidal, ramp, asymmetric,
3 sawtooth, square, and channel-optimized waveforms.

1 16. The method according to claim 12, wherein said second and third
2 waveforms are identical, so that said information character is redundant in said first
3 waveform to increase robustness of said source signal.

1 17. The method according to claim 12 wherein said second and third
2 waveform together represent said information character.

1 18. The method according to claim 12 wherein said second waveform
2 represents said information character and said third waveform represents said information
3 character, so that said information character occurs more than once in said first waveform
4 to increase robustness of said source signal.

1 19. The method according to claim 18 wherein said second waveform
2 and said third waveform are different waveforms.

1 20. The method according to claim 12 wherein said second waveform
2 and said third waveform have different periods, the sum of which is equal to said first
3 period.

1 21. The method according to claim 12 wherein said periods of second
2 waveform and said third waveform each is one-half of said first period.